1999 Higher Education Retirement Plan Study

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Introduction:

Purpose of this report:

Language contained in the Operating Budget enacted in 1999 directed the Office of the State Actuary (OSA) to study two separate aspects of the Higher Education Retirement Plans (HERP) administered by Washington's colleges, universities and community colleges. The first aspect was to determine the level of retirement income which can reasonably be expected based on the current level of employer and employee contributions to the HERP plans. The second was to assess the fiscal and policy implications of expanding part-time faculty eligibility for the Supplemental retirement allowance funded by the state. (For statutory language, see Appendix A.)

Organization of Material:

This one report contains the findings and recommendations of the two mandated studies. It is divided into three sections.

Part I provides a general background on the retirement plans provided by the state's institutions of higher education. Included in this section are demographics of the faculty, librarians and professional staff that are eligible to participate in the HERP plans.

Part II employs a retirement benefit model to approximate the level of retirement benefits provided by current employer and employee contributions. These estimated outcomes are then compared with the benefit levels provided through current contributions to PERS Plan 1.

Individual colleges and universities administer their own HERP plans. Data regarding employee participation and benefits are not maintained by either the Department of Retirement systems (DRS) or the state actuary. Demographic and salary data have been provided by the institutions themselves. Information about investment returns comes from the Teachers' Insurance and Annuity Association and College Retirement Equities Fund (TIAA-CREF).

Part III examines the implications of extending HERP benefits to part-time community college faculty, including eligibility for the state-supported Supplemental retirement benefit.

The final section of this report contains appendices of statistical data and statutory language. They are intended for use as reference material.

Scope of the Report:

This report is not intended to provide complete information concerning the effect or adequacy of the HERP. Rather, it is intended to provide sufficient information for the legislature to determine if additional study is warranted. A more intense study would require collection of information on a wider variety of participants, studying their asset allocations and studying the effect of different investment options.

For this report we have looked at the historical salaries of a few typical individuals who are near retirement to determine the reasonableness of our assumptions. We were not able to obtain the actual plan balances of any individual nor could we obtain Supplementation calculation sheets to corroborate our model and assumptions.

We have tried to answer the questions: What benefits has the plan developed for those currently retiring with meaningful service and what benefits can mid-career or new employees expect when they retire?

Executive Summary:

Current contribution rates and historical investment return are producing benefits for recent retirees far in excess of the PERS benefit and the 60% limit. Unless there is a substantial equity market drop, current members who will retire in the future are likely to have benefits in excess of 60% of AFC.

The current contribution rate schedule will likely produce benefits above the PERS benefit level for new employees. Investment return rates of 7.5% and average salary increases of 5% per year will require contribution rates of approximately 75% of the current ones to produce a 60% benefit at age 65 with 30 years of service.

Supplementation is unlikely to occur at current contribution rate levels except in unique situations. Factors that affect Supplementation include: investment return; retirement age; service credit; AFC, etc. Care should be exercised when changes to these areas are contemplated to avoid increased utilization of Supplementation.

I. Background on Higher Education Retirement Plans:

There are six state-supported colleges and universities in Washington state and over 30 community and technical colleges. (For complete list, see Appendix B.) Each institution administers its own defined contribution retirement plan. Each plan is identical in concept, but varies slightly based on definitions adopted by the institution's trustees. Their authority to implement such plans is authorized in RCW 28B.10.400.

Participation in the higher ed plans is limited to faculty, librarians and specified administrators. All other employees participate in the Public Employees' Retirement System (PERS) administered by the state.

Each higher education plan contains two components: a defined contribution plan funded by the employee and employing institution and a Supplemental benefit that may be provided by each institution under certain circumstances. This Supplemental benefit guarantees a specified minimum level of income at retirement.

Defined contribution plans have historically been the choice of higher education institutions because they provide a highly portable benefit. Faculty are able to move from one institution to another, without negatively impacting their savings.

For many years, the Teachers' Insurance and Annuity Association and the College Retirement Equities Fund (TIAA-CREF) were the only vehicles for such investments. These two plans are administered by companion private non-profit organizations. TIAA provides a benefit based on a guaranteed fixed annuity. CREF provides a variable annuity benefit. Lately, the state's colleges and universities have begun engaging other fund sponsors to provide investment options to faculty.

1. Higher Education Retirement Plan (HERP) Design:

The employee and the employing institution (employer) both make matching pre-tax contributions to an investment fund or funds as directed by the employee. At retirement, the size of the retirement benefit is determined by the employee's age and the amount of contributions and investment earnings which have accumulated in the retirement account. The employer/employee contribution is based on the employee's salary and age:

- 5% prior to age 35;
- 7.5% age 35 to age 50; and
- 10% age 50 to retirement, if elected by the member.

The TIAA fund is made up of fixed income investments. Returns from this fund are relatively stable, but low compared to the CREF fund. One of the payout options available at retirement is a life annuity based on the fixed income investment rate.

The CREF fund is comprised of equity investments. Returns from this fund are usually higher than TIAA, but more susceptible to market volatility. One of the optional payout forms at retirement is a variable annuity for life. At retirement it provides an income which varies with the performance of CREF. To provide a greater likelihood of developing an increasing benefit, a low level of investment return (5%) is assumed. This benefit will start lower in the first year but will increase as investment gains occur. HERP participants are encouraged, but not required, to invest in a combination of these two types of funds to benefit from TIAA's stable returns and CREF's higher yields.

HERP participants with 10 years of service are entitled to receive benefits upon retirement or other separation from covered employment regardless of age. Retirees are not required to begin receiving benefits immediately, but must start before April 1 the year after reaching age 70½.

At retirement, members may elect to receive up to 50% of their total accumulations as a lump sum payment or in installments over a fixed period of time. Payments made over a fixed period are subject to the distribution options offered by TIAA or other fund sponsors. Accumulations not paid as a lump sum or in installments are converted to a lifetime annuity. The form of the annuity is also subject to the options offered by TIAA or other fund sponsors.

The HERP benefit package is summarized in Appendix C.

2. The Higher Education Supplemental Benefit:

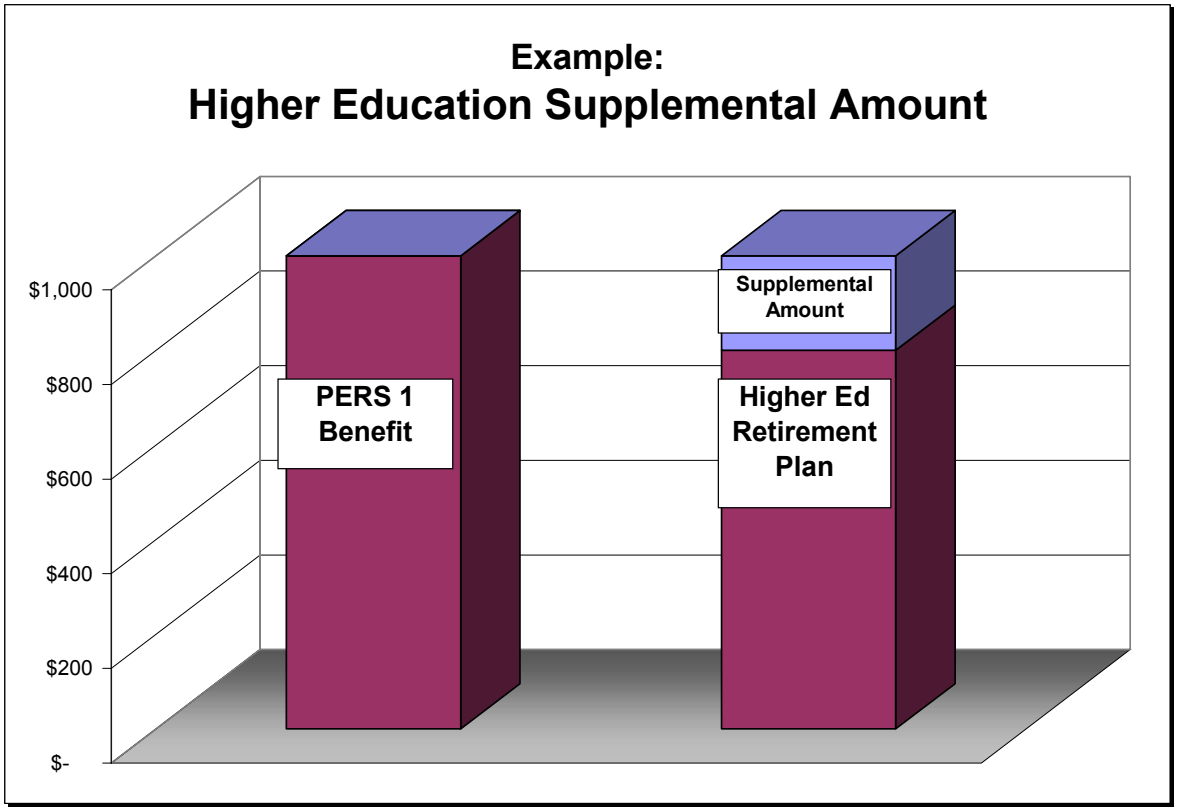
In addition to the defined contribution benefit, the state may provide a Supplemental benefit. This additional benefit is paid if the base pension does not provide a benefit at least equal to the benefit provided by multiplying the member's two year average final compensation by 2% and their years of service. This threshold formula is similar to the benefit provided by PERS 1 and the terms are used interchangeably in this report. Unlike PERS calculation of the Supplementation benefit is capped at 25 years.

The Supplemental benefit provides the difference between the HERP member's pension amount and the threshold benefit. This Supplement is paid for the life of the member.

To be eligible for the Supplemental benefit, a member must have attained age-62 or retired for a health condition. Members who have completed 25 years of service, as defined by the employing institution, receive the full amount of the Supplement.

Members with at least 10, but less than 25 years of service, receive a reduced benefit that is 4% of the full Supplement, multiplied by their years of service. A reduced Supplement is also paid if the member elects to continue contributions at 7.5% after age 50. In this case, the member is only eligible for 75% of the full Supplement amount.

Payments of the Supplemental benefit are made as a lifetime annuity over the life of the retiree or the retiree and a designated beneficiary. In the later case, the Supplement is reduced to account for the longer period the benefit is expected to be paid. Supplemental benefits provided to retirees who have not reached age 65 are actuarially reduced.



The intent of the higher education Supplement is to provide benefits that are, at a minimum, comparable to the level provided by PERS 1. The Supplement allows members to realize the advantages of a defined contribution plan when investment experience is favorable. On the other hand, HERP members have the guarantee of a defined benefit formula if investment experience is not favorable.

The funding for the Supplemental benefit is on a pay-as-you-go basis. Benefits are not pre-funded, but are paid out of each institution's operating funds. Due to the strong investment return over the last 15 years there are very few new retirees that receive Supplementation.

3. Comparison with Other Washington Retirement Systems:

Retirement benefits for most of Washington's other public employees are provided through defined benefit plans. These are the:

- Public Employees' Retirement System (PERS);
- Teachers Retirement System (TRS);
- Law Enforcement and Fire Fighters' Retirement System (LEOFF);
- Washington State Patrol Retirement System (WSP); and
- School Employees' Retirement System (SERS).

In a defined benefit (DB) plan, both the employer and employee contribute to the fund during the employee's working career. At retirement, the benefit provided is determined by a formula which multiplies the employee's years of service by his or her final average compensation and a 2% multiplier.

TRS and SERS both contain benefit tiers that combine a defined benefit with a defined contribution plan. These tiers are known as Plan 3. At retirement eligibility, participants in these plans receive a DB benefit based on a formula identical to that of other Washington systems, except the multiplier used is 1% instead of 2%. In addition to the DB benefit, members receive income from a defined contribution account.

PERS 1, TRS 1 & WSP Contribution Rates - Members of PERS 1 and TRS 1 contribute to their retirement benefit at a fixed rate of 6% of salary. WSP members contribute a fixed rate of 7%. Their employers are required to contribute the balance necessary to fully fund future benefits. This contribution varies based on several factors; actuarial assumptions, economic experience, demographic experience and changes in benefits.

LEOFF 1 - Members of LEOFF 1 and their local employers each contribute at a fixed rate of 6% of salary. In this system only, the state also contributes. The state is required to fund that amount necessary to pay for future benefits. As with the other Plan 1 systems and WSP, the amount of state contributions varies.

Plans 2 - Plan 2 members and employers each contribute one half of the amount necessary to fund benefits. Contributions rates vary.

Plans 3 - In the Plans 3, only employers contribute to the defined benefit portion of the member's benefit. Contributions rates vary.

As an example of the difference between the funding approaches for Plan 1 and Plans 2/3, Appendix F contains the historical contribution rates for PERS employees and employers.

II. Benefits Provided by Current Level of State Contributions:

1. Background on Study Data and the Benefit Model

Determining the level of benefits the average HERP member receives is problematic. Information about participants, their actual investment choices, accumulated balances and benefit payment methods is not maintained by the employer. Individual institutions maintain contribution and salary information pertaining to the period the member is employed. However, the account balances and contribution allocations are maintained by TIAA or other fund sponsor.

To provide information on the benefits of recent retirees we need salary growth rates, historical investment returns and the allocation of member contributions between TIAA and CREF.

In the first step of building our benefit model, a historical salary increase of 6% per year was assumed. This was checked for reasonableness anecdotally by reviewing the salary histories of ten long service HERP members. These were provided by the universities and verified the reasonableness of the assumption.

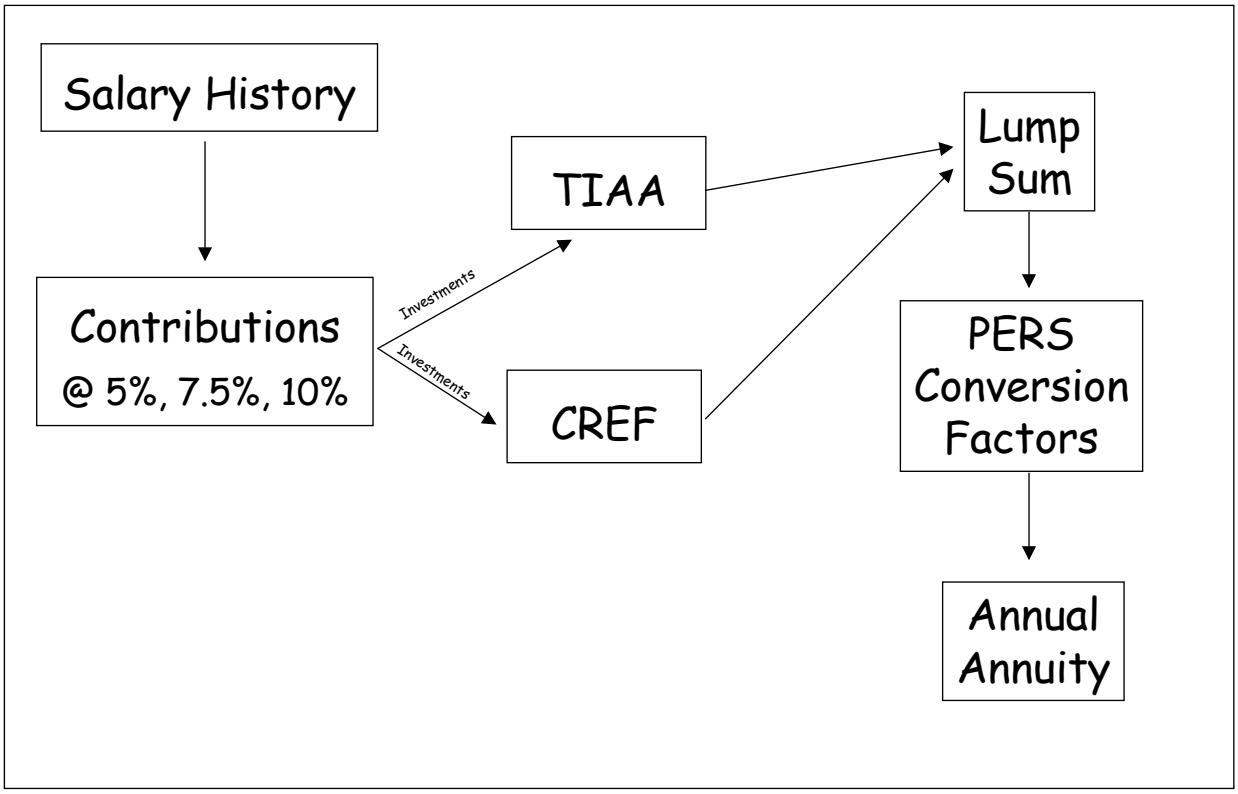
The 6% rate was then applied to a typical current salary of $75,000 to develop a salary history. Based on these earnings, the benefit model calculated the amount of contributions a member and the state would have made to the member's retirement account during their career. We have based our analysis on the benefit as a percentage of final pay. The actual salary level is irrelevant since the benefits are all proportional.

In practice, HERP members can, and do, direct their contributions into a growing number of investment funds. As a result, each participant's investment allocations and return on investments are expected to be somewhat unique. In the benefit model, rates of return on participant contributions were estimated using the returns for the two original TIAA-CREF funds; the Traditional Annuity fund and the Equities stock account. These funds were used because they have been in existence the longest and their historical rates of return extent back far enough to facilitate the benefit model. During most of the employment history of recent retirees these two funds would have been the only options.

Three different allocations of contributions between the two funds were calculated to demonstrate the effect investment choice plays in benefit accumulations.

Allocations	
TIAA	**CREF**
25%	75%
50%	50%
75%	25%

Retirement account balances were determined based on these three mixes of investments and historical rates of return.



2. Model Data and Benefit Comparisons:

The two funds used in our analysis are defined contribution accounts. There is no annual income associated with them that can easily be compared to a percentage of salary as a benefit for life. In order to develop an income for life on the same basis as PERS we need to convert the account balances to life incomes on a consistent basis. The two funds do offer a lifetime annuity but the payout forms are not consistent. Therefore, we have used the PERS annuity factors to convert the HERP balances to comparable annuities.

The benefit model is designed to demonstrate the general level of income generated by contributions currently being made by participants and the state.

To provide perspective on these income levels, three other sets of numbers were generated:

- The amount of defined benefits provided by the PERS formula, based on the same salary, service and retirement age assumptions.

- Benefits produced in TIAA-CREF using the PERS 1 employee contribution rate of 6% and the regular TIAA-CREF contribution rate for the employer. We would expect the HERP benefits to be higher than PERS because the member pays a higher contribution. Part of any excess benefits of HERP over PERS would be attributable to the employees' higher contribution rate. In this second analysis, we have altered the employee contribution to be the same as in PERS. This is intended to remove the difference between the employee input into the two plans and make the results more comparable.

- RCW 28B.10.423 identifies as a retirement benefit goal, the replacement of no more than 60% of the member's average final compensation. The third comparison calculates the amount of contributions that would have been necessary to meet the 60% goal based on the economic data used in the benefit model.

3. Benefit Model Assumptions:

To develop a model that produces a representative benefit, some assumptions must be made regarding the member. The model assumes:

- The member retired in 1998 and began receiving benefits immediately.

- The member chose either a lump sum payment or a single life annuity.

- For retirements prior to age 65, benefits are calculated as if the member retired prior to 1998. For instance, if the member retired at age 62, the year of retirement would be 1995.

- If the member was first hired before October 1, 1977, the annuity is the same as PERS 1. If the member was first hired after September 30, a 3% COLA is included in the annuity amount as in PERS 2.

4. Benefits Generated By Current HERP Contribution Rates:

The table below shows the results of the benefit model based on current HERP contribution rates for employees and their employer. The benefits produced are expressed as the percent of AFC that is replaced by the annual annuity. At each age and years of service, benefit accumulations are shown for three investment allocations and compared to the amount provided by the PERS defined benefit. Members hired after 1977 are compared to PERS 2. The dollar values generated by HERP contributions are shown in a separate table contained in Appendix D.

Retirement age plays less of a factor in determining benefit as a percentage of salary than years of service. For all but one scenario, members with 20 or more years of service receive a benefit that is greater than 60% of AFC. PERS benefits provide 60% of AFC only if the member has 30 YOS.

Current contribution levels are producing benefits that are up to three times the PERS benefit depending upon the age and year of retirement and the aggressiveness of the members' contribution allocation.

	Higher Education Retirement Plan Benefit			PERS Benefit
	Percent of AFC Replaced with Contribution Allocation			
	25% TIAA 75% CREF	50% TIAA 50% CREF	75% TIAA 25% CREF	
Retirement At Age 65/ In 1998				
30 YOS	180%	147%	114%	60%
25 YOS	147%	120%	93%	50%
20 YOS	95%	80%	64%	40%
Retirement At Age 62/ In 1995				
27 YOS	110%	96%	83%	54%
22 YOS	147%	78%	66%	44%
17 YOS	55%	50%	44%	24%
Retirement At Age 60/ In 1993				
25 YOS	90%	80%	71%	50%
20 YOS	71%	64%	56%	40%
15 YOS	43%	39%	36%	17%

5. HERP Benefits with Employee Contribution Rate Replaced by the PERS Employee Rate:

Since the member pays a higher contribution into TIAA then they would into PERS, some of the higher benefit produced by TIAA is paid for by the member. To neutralize this difference we have developed TIAA benefits

where the employee contribution is the same as PERS and the employer contribution is the regular TIAA contribution. This means the employee investment in the TIAA and the PERS benefit is the same.

TIAA Benefit Developed Using PERS Employee Rate				
	Higher Education Retirement Plan Benefit			PERS Benefit
	Percent of AFC Replaced			
	25% TIAA 75% CREF	50% TIAA 50% CREF	75% TIAA 25% CREF	
Retirement At Age 65/ In 1998				
30 YOS	155%	127%	98%	60%
25 YOS	125%	102%	79%	50%
20 YOS	75%	62%	50%	40%
Retirement At Age 62/ In 1995				
27 YOS	95%	83%	71%	54%
22 YOS	76%	66%	56%	44%
17 YOS	43%	39%	34%	24%
Retirement At Age 60/ In 1993				
25 YOS	78%	70%	61%	50%
20 YOS	62%	55%	48%	40%
15 YOS	34%	31%	28%	17%

Even with this lessor rate of contributions, the benefits generated by the HERP plan are consistently higher than those generated by PERS.

6. Contribution Rates to Develop a 60% of AFC Benefit:

Based on historical rates of return and salary growth we have developed contribution rates that would develop a benefit that is 60% of AFC.

Contribution Rates Necessary to Generate Benefits Equal to 60% of AFC Based on Historical Rates of Return and Salary Growth									
	Contribution Allocations								
	25% TIAA / 75% CREF			50% TIAA / 50% CREF			75% TIAA / 25% CREF		
	Prior to Age 35	Age 35 to Age 50	Age 50 & Over	Prior to Age 35	Age 35 to Age 50	Age 50 & Over	Prior to Age 35	Age 35 to Age 50	Age 50 & Over
Retirement At Age 65/ In 1998									
30 YOS	1.7%	2.5%	3.3%	2.0%	3.1%	4.1%	2.6%	4.0%	5.3%
25 YOS	1.7%	2.6%	3.4%	2.1%	3.1%	4.2%	2.7%	4.0%	5.4%
20 YOS	2.1%	3.1%	4.2%	2.5%	3.8%	5.0%	3.1%	4.7%	6.2%
Retirement At Age 62/ In 1995									
27 YOS	2.4%	3.7%	4.9%	2.8%	4.2%	5.6%	3.3%	4.9%	6.5%
22 YOS	2.5%	3.7%	5.0%	2.8%	4.3%	5.7%	3.3%	5.0%	6.6%
17 YOS	2.2%	3.3%	4.4%	2.5%	3.7%	4.9%	2.8%	4.2%	5.5%
Retirement At Age 60/ In 1993									
25 YOS	2.8%	4.2%	5.6%	3.1%	4.7%	6.2%	3.5%	5.3%	7.1%
20 YOS	2.8%	4.2%	5.6%	3.1%	4.7%	6.3%	3.6%	5.4%	7.1%
15 YOS	2.0%	3.1%	4.1%	2.2%	3.3%	4.4%	2.4%	3.6%	4.9%

7. Benefits for Mid-Career and Entry-Level Members:

Contribution rates shown above are based on historical returns. This time period, from the early 1980s to today, has been one of the best in history (see Appendix E). There are no guarantees that this level of investment gain will continue or be replicated in the future.

HERP participants at mid-career have already benefited to some extent by high rates of return. Even if investment returns moderate in the future, most current members will have higher benefits then the PERS program would produce. However their benefits will also be affected by future rates of return.

The following table shows the level of benefits which could be expected for a mid-career member. This member has participated in HERP for 15 years, is expected to participate for another 15 and will retire at age 65. The results of the model are based on rates of return over the last 15 years and future returns estimated at 7.5% and 8%. In each case, benefit levels are calculated for the same three contribution allocations used in the previous tables.

Member Retiring In 15 Years At Age-65 with 30 YOS		
Percent of AFC Replaced		
Contribution Allocation	**Investment Future Return**	
	7.5%	**8%**
TIAA 25%/75% CREF	100%	106%
TIAA 50%/50% CREF	91%	97%
TIAA 75%/25% CREF	82%	87%
PERS Benefit	60%	60%

Member Retiring In 15 Years
At Age-65 with 30 YOS
Contribution Rates Necessary to Generate Benefits Equal to 60% of AFC

	Future Investment Return					
	7.5%			**8%**		
Contribution Allocation	**Prior to Age 35**	**Age 35 to Age 50**	**Age 50 & Over**	**Prior to Age 35**	**Age 35 to Age 50**	**Age 50 & Over**
TIAA 25%/75% CREF	3.0%	4.5%	6.0%	2.8%	4.2%	5.6%
TIAA 50%/50% CREF	3.3%	4.9%	6.6%	3.1%	4.7%	6.2%
TIAA 75%/25% CREF	3.7%	5.5%	7.3%	3.5%	5.2%	6.9%

Unlike other participants, entry-level HERP members will not benefit from the exceptional returns of the past. Their benefits will be determined solely by returns of the future. To project benefit levels for this third group, additional assumptions were necessary:

- Assumptions regarding future investment return were substituted for the historical returns used in the previous calculations;
- A future salary growth assumption of 5% is used, the same rate currently used for valuation of the other retirement systems;
- To develop rates that will produce a benefit equal to 60% of AFC, we have chosen to ratio the current HERP contribution rate scale (5%, 7.5% and 10%) rather than explore different patterns of rates; and
- Total rate of return is the result of some combination of TIAA and CREF returns and occur uniformly throughout the member's work history.

The table below shows the results of the model using the perimeters discussed above. With a 7.5% rate of return, 80% of an entry-level member's AFC is expected to be replaced by HERP benefits. If a slightly higher return of 8% is realized, 86% of AFC will be replaced. PERS benefits remain at 60% of AFC regardless of return rates.

Member Retiring In 30 Years At Age-65 Percent of AFC Replaced		
	Investment Return	
	7.5%	8%
TIAA-CREF Benefit	80%	86%
PERS Benefit	60%	60%

Contribution Rates Necessary to Generate Benefits Equal to 60% of AFC Based						
	7.5% ROR & 5% Salary Growth			8% ROR & 5% Salary Growth		
	Prior to Age 35	Age 35 to Age 50	Age 50 & Over	Prior to Age 35	Age 35 to Age 50	Age 50 & Over
Retirement At Age 65						
30 YOS	3.7%	5.6%	7.5%	3.5%	5.2%	7.0%
25 YOS	3.9%	5.8%	7.7%	3.6%	5.5%	7.3%
20 YOS	4.2%	6.4%	8.5%	4.0%	6.1%	8.1%
Retirement At Age 62						
27 YOS	4.5%	6.7%	9.0%	4.2%	6.3%	8.4%
22 YOS	4.6%	6.9%	9.3%	4.4%	6.6%	8.8%
17 YOS	3.7%	5.6%	7.4%	3.6%	5.4%	7.2%
Retirement At Age 60						
25 YOS	4.8%	7.2%	9.6%	4.6%	6.8%	9.1%
20 YOS	5.0%	7.5%	9.9%	4.8%	7.1%	9.5%
15 YOS	3.3%	4.9%	6.6%	3.2%	4.8%	6.4%

The difference between the level of current contributions to HERP plans and the rate necessary to meet the 60% of AFC benefit goal is not as wide when investment return and salary growth are based on more conservative assumptions. Nonetheless, the table indicates that lower contributions to HERP plans are possible without abandoning the goal of replacing 60% of the member's AFC.

Conclusions:

The goal of this report is to provide enough information about the status of higher education retirement benefits. To determine if additional work is needed. A much more sophisticated analysis is necessary to project future benefits of both new and current employees in various stages of their career. Benefits could also be projected using different rates of return for different investment options and using investment return that varies over time.

III. Impact of Part-time Faculty Participation in HERP:

During the 1970's most members who retired were eligible for Supplementation. In our 1986 actuarial study we found that 98% of all new retirees in 1980 received Supplementation. By 1986 only 14% of new retirees received Supplementation. Today it is probably less than 5%. Only those members who retire under disability or some unique circumstances would qualify. We were unable to obtain information on recent retirees who have received Supplementation but it is clear that low investment return would not be the cause.

Eligibility for Supplementation is calculated using a formula similar to PERS: 2% x years of service x AFC at age 65. Benefits are actuarially reduced prior to 65. Changes to the factors in this formula could cause changes in the incidence of Supplementation. These factors are:

- ***Age for Supplementation Eligibility*** - The TIAA benefit that is compared to the Supplementation threshold is based on the account values in TIAA and CREF and uses an annuity value to convert it to a monthly benefit. The younger the age, the greater the annuity value, and the less benefit account balances will buy. The purpose of an early retirement reduction factor is to counteract the higher annuity values. In 1980, HERP members were included in an early retirement window. The early retirement benefit required the Supplementation calculation be made without an early retirement reduction factor. The result was early retirements with large Supplemental benefits that are still being paid today.

- ***Disability*** - The disability benefit is the same as unreduced early retirement. Although this can produce Supplemental benefits, the incidence of disability is low.

- ***AFC*** - Rapid increases in salary just prior to age 65 could produce Supplemental benefits. The account values in TIAA are affected very little by just a few years of higher salary late in a career. However, eligibility for Supplementation is based only on the highest two year salary period.

- ***Years of Service*** - A year of service credit is only counted when a full time contract is in effect. This ensures that the salary, service credit and the TIAA contribution are all based on consistent criteria. Allowing part time members to participate in HERP should not be a problem as long as the service credit included in the Supplementation calculation is also part time i.e. proportional to full time salary. Increased utilization of Supplementation could occur if service credit were granted in the same manner as in PERS; half time service gets a full year of service credit. Granting full time service credit for half time is not a problem if the AFC reflects a half time salary.

Supplementation could develop where half time service gets full time service credit and the member goes full time for the AFC period. The Supplementation threshold provided would then be the same as if the member had been full time throughout their career, but the TIAA account balance would reflect only half time contributions.

The tables below include calculations for members who would not currently qualify for Supplementation to illustrate the effect changes to the HERP benefit design would have on Supplementation costs. Under current statutes, HERP members retiring before age-62 are not eligible for Supplementation and members who are less than full time do not receive service credit. In the tables below 50% of full time benefits were calculated as if the member received half time salary and full time service credit until the last two years, and then received a full time salary. Supplemental benefits for those less than age 65 are actuarially reduced.

Higher Education
Retirement Plan Benefits
Based on Historical ROR & 6% Salary Growth

	Percent of Full-Time Employment					
	100%	**50%**	**100%**	**50%**	**100%**	**50%**
Retirement At Age 65/ In 1998						
	30 YOS		**25 YOS**		**20 YOS**	
TIAA/CREF Benefit	$ 87,029	$ 44,948	$70,948	$ 36,907	$ 48,564	$ 25,662
Threshold	$ 36,439	$ 36,439	$36,439	$ 36,439	$ 29,151	$ 29,151
Supplement	—	—	—	—	—	$ 3,489
Retirement At Age 62/ In 1995						
	27 YOS		**22 YOS**		**17 YOS**	
TIAA/CREF Benefit	$49,617	$24,808	$40,355	$20,177	$27,864	$13,932
Threshold	$30,595	$30,595	$26,923	$26,923	$20,804	$20,804
Supplement	—	$ 4,141	—	$ 4,827	—	$ 4,918
Retirement At Age 60/ In 1993						
	25 YOS		**20 YOS**		**15 YOS**	
TIAA/CREF Benefit	$36,600	$18,300	$29,452	$14,726	$19,982	$ 9,991
Threshold	$27,229	$27,229	$21,783	$21,783	$16,337	$16,337
Supplement	—	$ 5,168	—	$ 4,085	—	$ 3,673

Even with high historical investment returns, Supplementation is produced in almost all half time situations where full service credit is granted. The only half time members who did not qualify for Supplementation retired at age-65 with relatively long service.

In the table below, assumptions of more moderate economic growth are used. The rate of return is set at 7.5% and salary growth is held at 5%. Threshold benefits for relatively long-service members retiring at age 65 remain about the same as in the previous table. Benefit levels, however are projected to be much lower. The result is that all half time members who go full time at the end of their career would become eligible for Supplementation.

Higher Education
Retirement Plan Benefit
Based on 7.5% ROR & 5% Salary Growth

	Percent of Full Time Employment					
	100%	**50%**	**100%**	**50%**	**100%**	**50%**
Retirement At Age 65/ In 1998						
	30 YOS		**25 YOS**		**20 YOS**	
TIAA/CREF Benefit	$ 48,884	$ 25,788	$21,078	$ 21,078	$ 29,915	$ 16,253
Threshhold	$ 36,607	$ 36,607	$36,607	$ 36,607	$ 29,286	$ 29,286
Supplement	—	$ 10,819	—	$ 15,529	—	$ 13,033
Retirement At Age 62/ In 1995						
	27 YOS		**22 YOS**		**17 YOS**	
TIAA/CREF Benefit	$ 33,082	$ 16,541	$ 26,547	$ 13,273	$ 19,954	$ 9,977
Threshhold	$ 31,623	$ 31,623	$ 27,828	$ 27,828	$ 21,503	$ 21,503
Supplement	—	$ 10,792	$ 917	$ 10,415	$ 1,109	$ 8,248
Retirement At Age 60/ In 1993						
	25 YOS		**20 YOS**		**15 YOS**	
TIAA/CREF Benefit	$ 25,753	$ 12,877	$ 20,355	$ 10,177	$ 14,968	$ 7,484
Threshhold	$ 28,683	$ 28,683	$ 22,946	$ 22,946	$ 17,210	$ 17,210
Supplement	$ 1,695	$ 9,148	$ 1,500	$ 7,391	$ 1,297	$ 5,629

Conclusion:

Allowing part time faculty to participate in HERP under its current design is not likely to produce a great increase in the number of members becoming eligible for Supplementation. This is true whether investment return remains high or moderates in future years.

If current design is altered, increased eligibility for Supplementation is probable. The two changes that would have the greatest effect on eligibility are:

- Lowering the retirement age, either permanently or through an early retirement window; and
- Allowing full time service credit for less than full time salary.

Appendix A

Engrossed Substitute Senate Bill 5180, Section 105 - "...(2) The office of the state actuary shall conduct a review of the higher education retirement plans that have been established pursuant to RCW 28B.10.400. The review shall include:

(a) An actuarial study pursuant to RCW 28B.10.423 of the level of retirement income which is projected to result from the current level of employer and employee contributions to such plans; and

(b) a review of the fiscal and policy implications of expanding part-time faculty eligibility for Supplemental retirement allowances.

By January 15, 2000, the state actuary shall report his findings to the appropriate committees of the legislature, including:

(1) Recommendations for adjusting contribution rates to meet the requirements of RCW 28B.10.423; and

(2) For recommended modifications to the Supplemental retirement allowance statutes to address part- time faculty issues".

Appendix B

4-Year Institutions

Central Washington University
Eastern Washington University
The Evergreen State College
University of Washington
Washington State University
Western Washington University

2-Year Institutions

Bates Technical College
Bellevue Community College
Bellingham Technical College
Big Bend Community College
Cascadia Community College
Centralia College
Clark College
Clover Park Technical College
Columbia Basin Community College
Edmonds Community College
Everett Community College
Grays Harbor College
Green River Community College
Highline Community College
Lake Washington Technical College
Lower Columbia College
North Seattle Community College
Olympic College
Peninsula College
Pierce College
Renton Technical College
Seattle Vocational Institute
Shoreline Community College
Skagit Valley College
South Puget Sound Community College
South Seattle Community College
Spokane Falls Community College
Tacoma Community College
Walla Walla Community College
Wenatchee Valley College
Whatcom Community College
Yakima Valley Community College

Appendix C

Feature	Description
Membership	♦ Appointed faculty of universities, colleges and community colleges; and ♦ Specified non-faculty, (varies by institution).
Vesting	♦ Immediate vesting of basic contributory annuity plan; ♦ 10 years of service for Supplemental benefit.
Member Contributions	♦ 5% of compensation prior to age 35; ♦ 7.5% from age 35; ♦ At age 50, member may elect to contribute at 10% of compensation.
Employer Contributions	♦ 100% match of member contributions.
State Contributions	♦ State does not contribute to the higher education defined contribution benefit. ♦ Funding of the Supplement is "pay as you go" from the general fund.
Average Final Compensation	♦ Two highest consecutive years of service.
Eligibility for Retirement	♦ Termination from employment; ♦ Ten years of in-state service; and ♦ Attainment of Social Security early retirement age, (currently age 62).
Retirement Allowance	An annuity or a lump sum payment plus annuity. Amount of benefit determined by the employer and employee's contributions plus investment earnings.
Cost-of-living Adjustment (COLA)	♦ Depends on annuity option elected.
Portability	May be transferred to any educational and/or research institution offering the investment organization ofor their retirement plan. Supplementation is not portable.

Appendix D

	Higher Education Retirement Plan Benefits						PERS Benefit	
	Contribution Allocations							
	25% TIAA 75% CREF		50% TIAA 50% CREF		75% TIAA 25% CREF			
	Dollars	% of AFC	Dollars	% of AFC	Dollars	% of AFC	Dollars	% of AFC
Retirement At Age 65/ In 1998 AFC = $72,877								
30 YOS							**PERS 1**	
Lump Sum	$1,278,874		$1,044,334		$ 809,795		$ 426,599	
Annual Annuity	$ 131,085	180%	$ 107,044	147%	$ 83,004	114%	$ 43,726	60%
25 YOS							**PERS 1**	
Lump Sum	$1,041,959		$ 851,302		$ 660,646		$ 355,499	
Annual Annuity	$ 106,801	147%	$ 87,259	120%	$ 67,716	93%	$ 36,439	50%
20 YOS							**PERS 2**	
Lump Sum	$ 720,858		$ 603,511		$ 486,165		$ 302,452	
Annual Annuity	$ 63,852	95%	$ 53,458	80%	$ 43,064	64%	$ 26,791	40%
Retirement At Age 62/ In 1995 AFC = $61,189								
27 YOS							**PERS 1**	
Lump Sum	$ 696,491		$ 608,912		$ 521,333		$ 341,196	
Annual Annuity	$ 67,450	110%	$ 58,968	96%	$ 50,487	83%	$ 33,042	54%
22 YOS							**PERS 1**	
Lump Sum	$ 561,363		$ 490,019		$ 418,674		$ 278,012	
Annual Annuity	$ 54,364	89%	$ 47,454	78%	$ 40,545	66%	$ 26,923	44%
17 YOS							**PERS 2**	
Lump Sum	$ 381,145		$ 342,185		$ 303,226		$ 167,972	
Annual Annuity	$ 31,046	55%	$ 27,873	50%	$ 24,699	44%	$ 13,682	24%
Retirement At Age 60/ In 1993 AFC = $54,458								
25 YOS							**PERS 1**	
Lump Sum	$ 521,874		$ 467,054		$ 412,234		$ 291,058	
Annual Annuity	$ 48,822	90%	$ 43,694	80%	$ 38,565	71%	$ 27,229	50%
20 YOS							**PERS 1**	
Lump Sum	$ 416,101		$ 371,259		$ 326,417		$ 232,846	
Annual Annuity	$ 38,927	71%	$ 34,732	64%	$ 30,537	56%	$ 21,783	40%
15 YOS							**PERS 2**	
Lump Sum	$ 275,940		$ 253,522		$ 231,104		$ 112,353	
Annual Annuity	$ 21,344	43%	$ 19,610	39%	$ 17,876	36%	$ 8,690	17%

	Higher Education Retirement Plan Benefits						PERS Benefit	
	Contribution Allocations							
	25% TIAA 75% CREF		50% TIAA 50% CREF		75% TIAA 25% CREF			
	Dollars	% of AFC	Dollars	% of AFC	Dollars	% of AFC	Dollars	% of AFC
Retirement At Age 65/ In 1998 AFC = $72,877								
30 YOS							**PERS 1**	
Lump Sum	$ 1,104549		$ 900,008		$ 695,468		$426,599	
Annual Annuity	$ 113,216	155%	$ 92,251	127%	$ 71,285	98%	$ 43,726	60%
25 YOS							**PERS 1**	
Lump Sum	$ 891,326		$ 726,280		$ 561,233		$ 355,499	
Annual Annuity	$ 91,361	125%	74,444	102%	$ 57,526	79%	$ 36,439	50%
20 YOS							**PERS 2**	
Lump Sum	$ 564,096		$ 471,099		$ 378,102		$ 302,452	
Annual Annuity	$ 49,966	75%	$ 41,729	62%	$ 33,492	50%	$ 26,791	40%
Retirement At Age 62/ In 1995 AFC = $61,189								
27 YOS							**PERS 1**	
Lump Sum	$ 603,263		$ 526,251		$ 449,240		$ 341,196	
Annual Annuity	$ 58,421	95%	$ 50,963	83%	$ 43,505	71%	$ 33,042	54%
22 YOS							**PERS 1**	
Lump Sum	$ 481,649		$ 419,247		$ 356,846		$ 278,012	
Annual Annuity	$ 46,644	76%	$ 40,601	66%	$ 34,558	56%	$ 26,923	44%
17 YOS							**PERS 2**	
Lump Sum	$ 299,417		$ 268,134		$ 236,851		$ 167,972	
Annual Annuity	$ 24,389	43%	$ 21,841	39%	$ 19,293	34%	$ 13,662	24%
Retirement At Age 60/ In 1993 AFC = $54,458								
25 YOS							**PERS 1**	
Lump Sum	$ 453,442		$ 404,984		$ 356,525		$ 291,058	
Annual Annuity	$ 42,421	78%	$ 37,887	70%	$ 33,354	61%	$ 27,229	50%
20 YOS							**PERS 1**	
Lump Sum	$ 358,246		$ 318,768		$ 279,289		$ 232,846	
Annual Annuity	$ 33,515	62%	$ 29,821	55%	$ 26,128	48%	$ 21,783	40%
15 YOS							**PERS 2**	
Lump Sum	$ 217,487		$ 199,302		$ 181,118		$ 112,353	
Annual Annuity	$ 16,823	34%	$ 15,416	31%	$ 14,009	28%	$ 8,690	17%

Appendix E

Calendar Year	TIAA Traditional Annuities Annual Return	CREF Stock Annual Return
1953	2.8%	2.54%
1954	2.8%	48.83%
1955	3.0%	25.48%
1956	3.0%	9.50%
1957	3.1%	-4.71%
1958	3.1%	41.22%
1959	3.3%	13.89%
1960	3.5%	3.36%
1961	3.8%	18.60%
1962	3.9%	-14.36%
1963	4.0%	18.34%
1964	4.3%	12.66%
1965	4.3%	17.75%
1966	4.3%	-4.66%
1967	4.5%	23.42%
1968	4.5%	6.12%
1969	4.8%	-5.51%
1970	6.7%	-3.22%
1971	7.0%	20.25%
1972	7.0%	17.07%
1973	7.4%	-18.14%
1974	7.5%	-30.95%
1975	7.5%	32.06%
1976	7.5%	21.19%
1977	7.7%	-6.44%
1978	7.8%	8.68%
1979	8.4%	15.83%
1980	9.3%	26.58%
1981	11.6%	-1.46%
1982	13.7%	21.86%
1983	12.5%	25.09%
1984	11.6%	4.69%
1985	11.7%	32.68%
1986	10.3%	21.82%
1987	8.7%	5.12%
1988	8.9%	17.46%
1989	9.2%	27.98%
1990	8.6%	-5.54%
1991	8.7%	30.09%
1992	7.7%	6.29%
1993	7.3%	13.90%
1994	6.5%	-0.12%
1995	7.5%	30.92%
1996	6.7%	19.42%
1997	7.1%	26.36%
1998	6.7%	22.94%

Appendix F

PERS 1
Contribution Rate History

Effective	Employee	Employer
9/1/99	6.00%	4.41%
7/1/99	6.00%	4.41%
9/1/97	6.00%	7.32%
9/1/95	6.00%	7.42%
9/1/93	6.00%	7.41%
7/1/93	6.00%	7.29%
9/1/92	6.00%	7.29%
9/1/91	6.00%	7.72%
9/1/90	6.00%	7.39%
7/1/89	6.00%	6.28%
9/1/88	6.00%	5.95%
7/1/87	6.00%	5.95%
7/1/86	6.00%	9.11%
7/1/85	6.00%	9.06%
7/1/83	6.00%	7.10%
8/1/82	6.00%	6.40%
7/1/81	6.00%	6.34%
7/1/79	6.00%	7.00%
7/1/77	6.00%	5.71%
7/1/76	6.00%	7.00%
7/1/75	6.00%	7.00%
7/1/73	6.00%	7.00%
7/1/71	5.00%	4.36%
7/1/69	5.00%	6.00%
7/1/67	5.00%	6.00%
7/1/65	5.00%	6.00%
7/1/57	5.00%	6.00%
4/1/55	5.00%	5.00%
4/1/53	5.00%	5.00%
1/1/50	5.00%	5.00%
4/1/49	5.00%	5.00%
10/1/47	5.00%	

PERS 2
Contribution Rate History

Effective	Employee	Employer
9/1/99	1.85%	4.41%
7/1/99	1.85%	4.41%
9/1/97	4.65%	7.32%
9/1/95	5.08%	7.42%
9/1/93	5.00%	7.41%
7/1/93	4.85%	7.29%
9/1/92	4.85%	7.29%
1/1/92	4.85%	7.72%
9/1/91	4.70%	7.72%
9/1/90	4.70%	7.39%
7/1/89	4.70%	6.28%
9/1/88	4.90%	5.99%
7/1/87	4.90%	5.99%
7/1/86	4.83%	8.27%
7/1/85	4.83%	8.22%
7/1/83	5.11%	7.10%
8/1/82	5.11%	6.40%
7/1/81	5.11%	6.34%
7/1/79	5.51%	7.15%
10/1/77	5.51%	7.01%